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10/644,216	08/20/2003	Timothy John Hunneyball	P/61212	6477

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EXAMINER	
BARON, HENRY	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/644,216	HUNNEYBALL, TIMOTHY JOHN	
	Examiner	Art Unit	
	HENRY BARON	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *8/20/2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 2* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/15/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

MA ALTERNATE ROUTING

Response to Arguments/Remarks

1. The instant application has been submitted as a reissue patent application of patent 6,276,687 on 8/20/2003.

2. Amended claims 1 – 2 are pending in the instant application.

3. Examiner has considered amended claims 1 and 2 of 8/20/2003, re-opened prosecution and has determined grounds for rejection.

Objection to the Specification

4. In view of the re-issue state of the instant application, the Examiner encourages the Applicant to carefully review the specification for clarity. For example, Examiner notes in the patent publication 6,276,687, column 1: line 0065, cites 'See FIG. 2 (from ISO 10589) for the use of these levels and the general environment of this protocol.' Examiner has been unable to locate a 'FIG 2' in the record and it is unclear whether Applicant is referring to FIG. 2 of ISO 10589 or the drawing was omitted contrary to the BRIEF DESCRIPTION OF DRAWING section.

5. For clarity, Applicant is encouraged to spell out Manual Adjacencies (MA) in the title.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> a. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mazzola, et al (U.S. Patent 5262906), hereafter Melden, in view of Farris et al (U.S. Patent 6195425) hereafter.

8. Regarding claim 1, Mazzola teaches of synchronous digital hierarchy (SDH) based communications network, comprising: a plurality of data communications channels embedded within the network (3: [0046] read .. to provide a routing method for use with SONET networks i.e. synchronous digital hierarchy (SDH) based communications network, comprising: a plurality of data communications channels embedded within the network, which minimizes message duplication. A further objective is to provide an alternative to the existing method of manually provisioning a network.) a plurality of intermediate systems (IS) divided between at least one non-IS--IS area and at least one IS---IS area within which a routing protocol forming part of a network layer of an open systems interconnection (OSI) is provided for routing a message from said at least one IS---IS area to a destination IS within said at least one non-IS---IS area, there being a plurality of connections between said at least one IS--IS area and said at least one non-IS---IS area;(6: [0009] read It is assumed that each network element supports the ES-IS (end system--intermediate system) routing exchange protocol , which is an OSI standard, published as OSI 9542 and incorporated herein by reference i.e. a plurality of intermediate systems (IS) divided between at least one non-IS--IS area and at least one IS---IS area within which a routing protocol forming part of a network layer of an open systems interconnection (OSI) . If a network element in the network does not support this protocol, it will not receive messages routed in accordance with the invention. In the ES-IS protocol, an end system (ES) is one that can receive a message. An intermediate system (IS) is one that merely routes messages. Each network element of FIGS. 2A-2C is both an ES and an IS if it is connected to a LAN 12. The ES-IS protocol calls for knowledge by each network element of the address and type of each network element to which it has a direct connection. i.e. for routing a message from said at least one IS---IS area to a destination IS within said at least one non-IS---IS area, there being a plurality

of connections between said at least one IS--IS area and said at least one non-IS---IS area); a plurality of manual adjacencies (MAs) constituting static routes at one of the IS within said at least one IS--IS area, for identifying routes to at least one network equipment (NE) within said at least one non- IS--IS area (1: [0049] read An alternative to routing algorithms is selective routing, where a network is manually provisioned and routing decisions are made by accessing a database of predetermined paths i.e. manual adjacencies (MAs) constituting static routes at one of the IS within said at least one IS--IS area . Using this approach to routing, all routes between network elements are fixed i.e. static, until the network is reprovisioned, instead of being the result of an algorithm that makes real time routing decisions based on current conditions. ….. A routing protocol in common use today is known as the ES-IS routing exchange protocol. This protocol defines all routing nodes as either an end system (ES) or an intermediate system (IS) or both. Under the ES-IS protocol, each routing node is provided with an ES-IS database, which stores the identity of other nodes with whom it has direct connection and whether those neighbors are capable of receiving or routing data. i.e. one IS--IS area, for identifying routes to at least one network equipment (NE) within said at least one non- IS--IS area.)

9. However, Mazzola does not disclose a means for removing from the MAs an identification of said at least one NE from which the message has been returned after at least one of the connections to the destination IS within said at least one non-IS—IS area was broken, and for allowing routing of the message via alternative MAs.

10. Farris teaches of a means for removing from the MAs an identification of said at least one NE from which the message has been returned after at least one of the connections to the destination IS within said at least one non-IS—IS area was broken, and for allowing routing of the message via alternative MAs. (4: [0016] read To prevent the formation of closed loops in bridged networks, IEEE draft publication P802.1D, referred to above, proposes a standard for a spanning tree algorithm that will connect the bridged network into a tree configuration, containing no closed loops, and spanning the entire

network configuration. The spanning tree algorithm is executed periodically by the bridges on the interconnected network, to ensure that the tree structure is maintained, even if the physical configuration of the network changes i.e. means for removing from the MAs an identification of said at least one NE from which the message has been returned from the MA after at least one of the connections to the destination IS within said at least one non-IS—IS area was broken. Basically, the bridges execute the spanning tree algorithm by sending special messages to each other to establish the identity of a "root" bridge. The root bridge is selected, for convenience, as the one with the smallest numerical identification. The algorithm determines which links of the bridges are to be active and which are to be inactive, i.e., disabled, in configuring the tree structure. One more piece of terminology is needed to understand how the algorithm operates. Each LAN has a "designated" link, which means that one of the links connectable to the LAN is designated to carry traffic toward and away from the root bridge. The basis for this decision is similar to the basis for selecting the root bridge. The designated link is the one providing the least costly (shortest) path to the root bridge, with numerical bridge identification being used as a tie-breaker. Once the designated links are identified, the algorithm chooses two types of links to be activated or closed: first, for each LAN its designated link is chosen, and second, for each bridge a link that forms the "best path" to the root bridge is chosen, i.e., a link through which the bridge received a message giving the identity of the root bridge. All other links are inactivated i.e. removing from the MAs an identification of said at least one NE from which the message has been returned. Execution of the algorithm results in interconnection of the LANs and bridges in a tree structure, i.e., one having no closed loops.)

11. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the IS—IS/ES SDH teachings of Mazzola with the network loop free teachings of Farris.

12. In this manner, static routes can be modified to provide alternate routes to ES in such a manner as to prevent message loops between network elements from occurring thus improving the use of network resources.

13. With regards to claim 2, Mazzola teaches of synchronous digital hierarchy (SDH) based communications network, comprising: a plurality of data communications channels embedded within the network (3: [0046] read .. to provide a routing method for use with SONET networks i.e. synchronous digital hierarchy (SDH) based communications network, comprising: a plurality of data communications channels embedded within the network, which minimizes message duplication. A further objective is to provide an alternative to the existing method of manually provisioning a network.) b) a plurality of intermediate systems (IS) divided between at least one non-IS--IS area and at least one IS---IS area within which a routing protocol forming part of a network layer of an open systems interconnection (OSI) is provided for routing a message from said at least one IS---IS area to a destination IS within said at least one non-IS---IS area, there being a plurality of connections between said at least one IS--IS area and said at least one non-IS---IS area;(4: [0009] read It is assumed that each network element supports the ES-IS (end system--intermediate system) routing exchange protocol , which is an OSI standard, published as OSI 9542 and incorporated herein by reference i.e. a plurality of intermediate systems (IS) divided between at least one non-IS--IS area and at least one IS---IS area within which a routing protocol forming part of a network layer of an open systems interconnection (OSI) . If a network element in the network does not support this protocol, it will not receive messages routed in accordance with the invention. In the ES-IS protocol, an end system (ES) is one that can receive a message. An intermediate system (IS) is one that merely routes messages. Each network element of FIGS. 2A-2C is both an ES and an IS if it is connected to a LAN 12. The ES-IS protocol calls for knowledge by each network element of the address and type of each network element to which it has a direct connection. i.e. for routing a message from said at least one IS---IS area to a destination IS within said at least one non-IS---IS area, there being a plurality

of connections between said at least one IS--IS area and said at least one non-IS---IS area); a plurality of manual adjacencies (MAs) constituting static routes at one of the IS within said at least one IS--IS area, for identifying routes to at least one network equipment (NE) within said at least one non- IS--IS area; (1: [0049] read An alternative to routing algorithms is selective routing, where a network is manually provisioned and routing decisions are made by accessing a database of predetermined paths i.e. manual adjacencies (MAs) constituting static routes at one of the IS within said at least one IS--IS area . Using this approach to routing, all routes between network elements are fixed i.e. static, until the network is reprovisioned, instead of being the result of an algorithm that makes real time routing decisions based on current conditions. ….. A routing protocol in common use today is known as the ES-IS routing exchange protocol. This protocol defines all routing nodes as either an end system (ES) or an intermediate system (IS) or both. Under the ES-IS protocol, each routing node is provided with a ES-IS database, which stores the identity of other nodes with whom it has direct connection and whether those neighbors are capable of receiving or routing data. i.e. one IS--IS area, for identifying routes to at least one network equipment (NE) within said at least one non- IS--IS area.)

14. Mazzola does not disclose a method of routing the message, comprising the steps of: a) creating a plurality of manual adjacencies (MAs) constituting static routes at one of the IS within said at least one IS--IS area to allow muting to at least one. network equipment (NE) within said at least one no, IS—IS area; b) returning the message from the MA said at least one NE to said at least one IS--IS area after at least one of the connections to the destination IS within said at least one non-IS--IS area was broken; and c) removing an identification of said at least one NE from which the message has been returned from the MAs, and allowing muting of the message via alternative MAs.

15. Farris teaches a method of routing the message, comprising the steps of: a) creating a plurality of manual adjacencies (MAs) constituting static routes at one of the IS within said at least one IS--IS area to allow muting to at least one network equipment (NE) within said at least one non IS—IS area; b)

returning the message from said at least one NE to said at least one IS--IS area after at least one of the connections to the destination IS within said at least one non-IS--IS area was broken; and c) removing an identification of said at least one NE from which the message has been returned from the MAs, and allowing muting of the message via alternative MAs. (4: [0016] read To prevent the formation of closed loops in bridged networks, IEEE draft publication P802.1D, referred to above, proposes a standard for a spanning tree algorithm that will connect the bridged network into a tree configuration, containing no closed loops, and spanning the entire network configuration. The spanning tree algorithm is executed periodically by the bridges on the interconnected network, to ensure that the tree structure is maintained, even if the physical configuration of the network changes i.e. returning the message from said at least one NE to said at least one IS--IS area after at least one of the connections to the destination IS within said at least one non-IS--IS area was broken. Basically, the bridges execute the spanning tree algorithm by sending special messages to each other to establish the identity of a "root" bridge. The root bridge is selected, for convenience, as the one with the smallest numerical identification. The algorithm determines which links of the bridges are to be active and which are to be inactive, i.e., disabled, in configuring the tree structure. One more piece of terminology is needed to understand how the algorithm operates. Each LAN has a "designated" link, which means that one of the links connectable to the LAN is designated to carry traffic toward and away from the root bridge. The basis for this decision is similar to the basis for selecting the root bridge. The designated link is the one providing the least costly (shortest) path to the root bridge, with numerical bridge identification being used as a tie-breaker. Once the designated links are identified, the algorithm chooses two types of links to be activated or closed i.e. allow muting to at least one. network equipment (NE) within said at least one no, IS—IS area: first, for each LAN its designated link is chosen, and second, for each bridge a link that forms the "best path" to the root bridge is chosen, i.e., a link through which the bridge received a message giving the identity of the root bridge. All other links are inactivated. Execution of the algorithm results in interconnection of

the LANs and bridges in a tree structure, i.e., one having no closed loops. i.e. returning the message from said at least one NE to said at least one IS--IS area after at least one of the connections to the destination IS within said at least one non-IS--IS area was broken)

16. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the IS—IS/ES SDH teachings of Mazzola with the network loop free teachings of Farris.

17. In this manner, static routes can be modified to provide alternate routes to ES in such a manner as to prevent message loops between network elements from occurring thus improving the use of network resources.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENRY BARON whose telephone number is (571)270-1748. The examiner can normally be reached on 7:30 AM to 5:00 PM E.S.T. Monday to Friday.

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin C. Harper/
Primary Examiner, Art Unit 2416

/H. B./
Examiner, Art Unit 2416
HB